

**New Jersey Department of Transportation
Bureau of Research
RESEARCH PROJECT
Request for Proposals
2012 Program**

**Date of RFP
11/2/2011**

**Closing Date
12/15/2011**

**Flood Warning System
Project No. 2012-07**

(Proposals must be prepared in accordance with NJDOT's *Information and Instructions for Preparing Proposals*. Please visit:

<http://www.state.nj.us/transportation/refdata/research/pdf/techpropresproj.pdf>

Revised Proposal Evaluation Forms are available for your information on the website.)

Proposals will be based on the merit of the information contained in the proposal. Budgets will be evaluated separately. Please place three (3) copies of the budget for this project in a separate sealed envelope.

1. RESEARCH PROBLEM STATEMENT, BACKGROUND AND OBJECTIVES

Both the National Weather Service (NWS) and the emergency management community recognize the importance of flood warning systems (FWS) for protecting lives and livelihoods. Communities across the country have created FWS to warn areas of flood danger, and to provide NWS with critical rainfall, stream level, and other hydrometeorological data. Nearly all FWS are built and operated using gages and a communications system to collect and distribute information. FWS, however, require a high level of ongoing commitment and support beyond one-time installation costs. Those with the most success have proactive, energetic staff members; strong long term operational funding; and a good rapport with the local NWS forecast office. Floods are the primary natural disaster in the United States indicated by the loss of many lives and destruction of homes and businesses in all 50 states during the past two years. Nearly half of all flash flood submersions are motor vehicle-related. Occupants should look out for flooding at highway dips, bridges, low areas, creeks and streams that approximate roads NJDOT should establish a automatic real-time hydrometeorological data collection transmission and monitoring system and an Operational Flood Forecasting Center .Hydro-meteorological systems can range from a sophisticated weather radar-based system to a network of manually read gauges.

Advance Knowledge about an impending flood can be used to:

- Warn low-lying areas to evacuate
- Schedule closure of schools and transportation of students
- Curtail electric and gas service to prevent fire and explosions

When enough time is made available by a local flood warning system, it can also often be put to use to reduce property damage including:

- Moving vehicles and equipment from low areas
- Relocating or stacking contents of private structures
- Shutting down motors and pumps to prevent damage
- Initiating flood fighting efforts
- Establishing security to prevent looting

2. TASKS

[Provide a listing of appropriate general tasks divided into phases based on types of work (e.g., laboratory, field) or by year (e.g., year 1, year 2) or other appropriate milestones]

The NJDOT is seeking the insight of proposal responders on how best to achieve the research objectives. Proposers are expected to describe a research effort that can realistically be accomplished as expeditiously as possible. Proposals must present the proposers' current thinking in sufficient detail to demonstrate their understanding of the problem and the soundness of their approach for conducting the required research.

PHASE I – Literature Search

Conduct a literature search of the current state of the practice.

After the award of the project, a more comprehensive literature search should be conducted. At the completion of this literature search, the PI will make a presentation to the Research Project Selection and Implementation Panel to discuss their findings and to discuss the appropriate research approach.

PHASE II – Research Approach and Anticipated Results

Clear description of how you will solve the problem and implement anticipated findings. Work may be divided into phases (e.g., Laboratory, Field or Year 1, Year 2) as necessary to clarify tasks. *Exit Criteria* must be developed during this phase.

3. IMPLEMENTATION AND TRAINING PLAN

The PI must meet with the Research Project Selection and Implementation Panel (RPSIP) and other NJDOT units to present the findings and as appropriate train these personnel in the use the project results. The PI will develop an implementation plan as per the guidelines provided by NJDOT Research Bureau.

4. DELIVERABLES:

[List of minimum deliverables necessary to complete the project]

- Presentation of Summary of Literature Search Results
- Discussion to Support and Refine the Project Tasks
- Project work plan.
- Technical Memorandum on the survey results
- Technical memorandum on the measures that are working or not working
- Technical memorandum on actions taken
- Interim Status reports suitable for Senior Leadership if required
- Quarterly Reports and Final report with appropriate tables, graphs and charts in hard copy version, PDF file format, Word, and on CD ROM. Two copies plus one per RSIP member of each presentation, technical memorandum, draft final report and Final Report (10 copies). The Final Report and Tech Brief are due three (3) months before the end date of the project to allow time for review by the Research Project Selection and Implementation Panel. Final Acceptance will be granted upon receipt of ten copies of the approved final report and technical brief.

5. CONTRACT TIME:

The PI must provide the anticipated research study duration based on the proposed tasks. Consideration should be given to potential impediments so that adjustments are incorporated into the schedule minimizing the need for time extensions. A timeframe of 6 - 12 months is desired.

6. CONTACTS:

Upon request, and subject to staff availability, a meeting may be scheduled with interested parties after the RFP's are distributed to refine the objectives and deliverables and to promote a better understanding of the research needs. Questions on this topic **shall not** be directed to any Research Project Manager, Research Customer, or any other NJDOT person. All questions and answers may be addressed during

this meeting (if conducted) or through e-mail. Visit the Bureau of Research website for information about the Bureau of Research. Contact Camille Crichton-Sumners before November 14, 2011 (Camille.CrichtonSumners@dot.state.nj.us) with RFP related questions or to express your interest in requesting or participating in a pre-proposal meeting.

7. DEADLINE

**Proposals (7 single-bound copies) are due at the NJDOT Bureau of Research
No later than 4:00 PM 12/15/2011**

Authorization to Begin Work: -- To be negotiated

8. DELIVERY INSTRUCTIONS:

For private, paid messenger services such as Federal Express, DHL, UPS, etc., or for hand-carried deliveries:

2012 PROPOSAL-NJDOT
New Jersey Department of Transportation
Bureau of Research
1035 Parkway Avenue
Trenton, New Jersey 08625-0600

For U.S. Postal Service mail:

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